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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,940	12/03/2001	Andreas Krause	364/85	7790

7590

10/08/2003

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EXAMINER

ZIMMERMAN, JOHN J

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,940

Applicant(s)

KRAUSE ET AL.

Examiner

John J. Zimmerman

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

FIRST OFFICE ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 3 and 4 are objected to because of the following informalities: The use of the term "preferably" (followed by further frequency and temperature recitations) in these claims is extraneous since the claims are interpreted by the broadest reasonable interpretation (the limitations which precede the "preferably" limitations). Deletion of the "preferably" limitations is requested in order to clear the claims of extraneous matter which has no bearing on claim interpretation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosure of the prior art in view of Kandev (U.S. Patent 6,386,270), and further in view of Pamart (U.S. Patent 4,475,721) and Kranz (U.S. Patent 3,773,503).

5. Applicant discloses that casting troughs used in the continuous casting of copper are known to be heated with gas burners in the prior art, but that heating in this manner generates considerable noise, excess heat and is difficult to control (e.g. see Background of the Invention; pages 1-5). This applicant's admitted disclosure of the prior art differs from the claims mainly in that induction heating of the trough is used to overcome the problems of noise, excess heat and difficulty of control presented by gas burners. Kandev is cited to show that Kandev also noted that high intensity burners are noisy, inefficient and are difficult to control when used in continuous copper casting operations (e.g. dam blocks; see column 2, lines 16-45). Kandev solved this problem by applying inductively heatable liner material to the continuous casting machine dam blocks (e.g. se column 3, lines 15-18) and discloses that this enables him to precisely control the temperature (e.g. column 3, lines 36-38). Kandev differs from the claims in that he applies the liner material to the dam blocks of a continuous caster, but since the same problems are admitted by applicant to also exist for the casting troughs of continuous casting machines, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the very same heating solution would apply to the troughs as to the dam blocks in a continuous copper casting operation.

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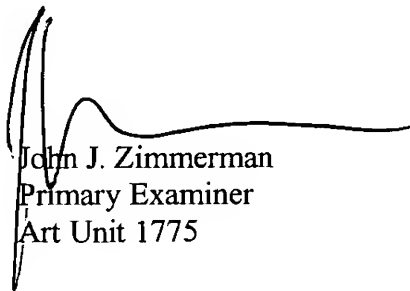
6. Kandev may differ from the claims in that Kandev may not disclose the use of graphite as the material for induction heating the casting apparatus. Pamart, however, discloses that induction coils can be used in conjunction with graphite sleeves to preheat casting channels (e.g. see column 2, lines 13-24). And Kranz discloses that induction heated graphite crucibles are used in the continuous casting of copper (e.g. see column 4, lines 18-31). Therefore it is clearly understood by those skilled in the art that graphite also serves as an art recognized alternative material in induction heated casting processes. In view of Pamart and Kranz, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use graphite or any other suitable art recognized alternative materials in the casting troughs of applicant's admitted prior art, since Kandev shows that induction heating is clearly better than using burners and Pamart and Kranz show other art recognized alternative materials that can be used in induction heating apparatuses.

7. Regarding the use of applicant's admitted disclosure of the prior art in this rejection, it is axiomatic that consideration of the prior art cited by the examiner must, of necessity, include consideration of the admitted state of the art found in applicant's specification, *In re Davis*, 305 F.2d 501, 134 USPQ 256 (CCPA 1962); *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986). Admitted knowledge in the prior art may be used in determining patentability of the claimed subject matter, *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zekely (U.S. Patent 5,084,089) is particularly pertinent since Zekely discloses that tundishes used in continuous casting processes are typically rectangular troughs which can be heated by induction or the application of plasma torches (e.g. see column 1, lines 20-39). Graf (DE 3221241) shows that heating to pouring temperature can take place in induction trough furnaces which are operated as continuous heaters (see abstract).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (703) 308-2512. The examiner can normally be reached on 8:30am-5:00pm, M-F. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
September 29, 2003